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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,680	12/05/2003	Ivan Jesus Fernandez-Corbaton	030319	9070

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EXAMINER	
MANOHARAN, MUTHUSWAMY GANAPATHY	
ART UNIT	PAPER NUMBER
2617	

NOTIFICATION DATE	DELIVERY MODE
11/02/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/728,680	FERNANDEZ-CORBATON ET AL.	
	Examiner	Art Unit	
	Muthuswamy G. Manoharan	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-18 and 21-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-18 and 21-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 4-18, and 21-36 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,4, 11,18,21,28,35, and 36 rejected under 35 U.S.C. 102(b) as being anticipated by Aoyama (US 2002/0154616).

Regarding **claim 1**, Aoyama teaches a base station that adaptively allocates at least one resource between a traffic signal and a dedicated reference signal, comprising:

means for receiving a quality metric from a remote station, wherein the quality metric indicates the quality of a signal transmitted from the base station and received by the remote station ("**CIR", carrier to interference ratio**, Paragraph [0077], Figure 8-10);

means for using the quality metric to adaptively allocate a fixed amount of power between the traffic signal and the dedicated reference signal to maximize the capacity for transmitting the traffic signal to the remote station ("**the total transmission power is fixed", "the transmission power ratio between code-multiplexed transmit data and**

a dedicated pilot signal is controlled in accordance with the propagation environment", Paragraph [0139]); and

means for transmitting the dedicated reference signal and the traffic signal to the remote station (Paragraph [0006]),

wherein the received common reference signal and the received dedicated reference signal are used to train a receiver at the remote station (Paragraph [0053]; Figure 6; refer Paragraphs [0061-0081] for further teachings regarding remote station).

Regarding **claim 4,** Aoyama further teaches the base station, further comprising means for transmitting a common reference signal to the remote station and to a plurality of other remote stations (Paragraph [0006], Figure 3).

Claims 11,18,28,35 and 36 are also rejected for the same reason as set forth in the above rejection of claim 1.

Claim 21 is rejected for the same reason as set forth in claim 4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-6,12-13,22-23 and 29-30 are rejected under 35 U.S.C. 103(a) as being

obvious over in view of Aoyama (US 2002/0154616) in view of Yavuz et al. (hereinafter Yavuz) (US 2003/0123406).

Regarding **claim 5,12,22, and 29**, Aoyama teaches all the particulars of the claim except wherein the quality metric comprises a signal-to- interference-and-noise ratio of the common reference signal received at the remote station. However, Yavuz teaches in an analogous art, wherein the quality metric comprises a signal-to- interference-and-noise ratio of the common reference signal received at the remote station (Paragraph [0008], lines 5-10; Paragraph [0025], lines 13-16). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the quality metric comprises a signal-to- interference-and-noise ratio of the common reference signal received at the remote station in order to include the effect of noise that is significant compared to the interference.

Regarding **claims 6,13,23 and 30**, Aoyama teaches all the particulars of the claim except wherein the quality metric comprises a symbol error rate of the common reference signal received at the remote station. However, Yavuz teaches in an analogous art, wherein the quality metric comprises a symbol error rate of the common reference signal received at the remote station (Paragraph [0027], line 9). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use symbol error rate of the common reference signal received at the remote station as an alternate quality metric in order to avoid packet retransmission.

Claims 7-8,14-15,24-25 and 31-32 are rejected under 35 U.S.C. 103(a) as being obvious over Aoyama (US 2002/0154616) in view of Farlow (WO 02/13448 A2).

Regarding **claims 7,14,24 and 31**, Aoyama discloses all the particulars of the claim except for means for transmitting a parameter e_x to the remote station, wherein the parameter represents the portion of the resource allocated to the dedicated reference signal.

However, Farlow teaches in an analogous art, means for transmitting a parameter to the remote station, wherein the parameter e_x represents the portion of the resource allocated to the dedicated reference signal **(Page 10, lines 20-25).** Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have means for transmitting a parameter to the remote station, wherein the parameter e_x represents the portion of the resource allocated to the dedi cated reference signal. This modification provides a method and system of power control adaption for data rate changes resulting in more optimal performance.

Also, this modification is a necessity than an inventive step. This is because, the length of the reference signal changes that information has to be informed to the receiver to process the signal. Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have means for transmitting a parameter to the remote station, wherein the parameter represents the portion of the resource allocated to the dedicated reference signal.

Regarding **claims 8,15,25, and 32,** Aoyama discloses all the particulars of the claim except for transmitting a parameter q to the base station, wherein the parameter

Θ=(L-1)/n.

However, Farlow discloses in an analogous art transmitting a parameter to the base station, wherein the parameter Θ=(L-1)/n (Page 9, lines 20-24). Therefore, it would be obvious to one of ordinary skill in the art at the time invention to transmit a parameter q to the base station, wherein the parameter Θ=(L-1)/n. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Claims 9-10,16-17,26-27 and 33-34 are rejected under 35 U.S.C. 103(a) as being obvious over Aoyama (US 2002/0154616) in view of Frank (US 6904081).

Regarding **claim 9,** Aoyama discloses all the particulars of the claim except means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for receiving a parameter Θ=(L-1)/n from the remote station. However Frank teaches in an analogous art, means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal (Col. 4, lines 34-59); and means for receiving a parameter Θ=(L-1)/n from the remote station. Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the base station of claim 1, further comprising: means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for receiving a parameter Θ=(L-1)/n from the remote station. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Regarding **claim 10**, Aoyama discloses all the particulars of the claim except means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for agreeing with the remote station about a fixed value for the parameter Θ=(L-1)/n. However Frank teaches in an analogous art, means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for agreeing with the remote station about a fixed value for the parameter Θ=(L-1)/n (Col. 4, lines 34-59). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the base station of claim 1, further comprising: means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for agreeing with the remote station about a fixed value for the parameter Θ=(L-1)/n. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Regarding **claim 16,** Aoyama discloses all the particulars of the claim except means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for transmitting a parameter Θ=(L-1)/n. However Frank teaches in an analogous art, means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal (Col. 4, lines 34-59); and means for transmitting a parameter Θ=(L-1)/n. Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the base station of 11,

further comprising: means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for transmitting a parameter Θ=(L-1)/n. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Regarding **claim 17,** Aoyama discloses all the particulars of the claim except means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for agreeing with the base station about a fixed value for the parameter Θ=(L-1)/n. However Frank teaches in an analogous art, means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for agreeing with the base station about a fixed value for the parameter Θ=(L-1)/n (Col. 4, lines 34-59). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the base station of 11, further comprising: means for computing the coefficients of an L -tap linear equalizer using a least squares estimation method over n chips of the common reference signal; and means for agreeing with the base station about a fixed value for the parameter Θ=(L-1)/n. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Regarding **claims 26,** Aoyama discloses all the particulars of the claim except for a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap

linear equalizer and wherein the receiver receives a parameter Θ=(L-1)/n from the remote station. However frank teaches in an analogous art, a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer and wherein the receiver receives a parameter Θ=(L-1)/n from the remote station (Col. 4, lines 34-59). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer and wherein the receiver receives a parameter Θ=(L-1)/n from the remote station. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Regarding **claims 27**, Aoyama discloses all the particulars of the claim except for a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer, and wherein the base station is configured to agree with the remote station about a fixed value for the parameter Θ=(L-1)/n. However Frank teaches in an analogous art, a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer, and wherein the base station is configured to agree with the remote station about a fixed value for the parameter Θ=(L-1)/n (Col. 4, lines 34-59). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have a training component at the remote station employs a least squares

estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer, and wherein the base station is configured to agree with the remote station about a fixed value for the parameter Θ=(L-1)/n. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Regarding **claim 33**, Aoyama discloses all the particulars of the claim except for a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer and wherein the transmitter also transmits a parameter Θ=(L-1)/n from the remote station. However Frank teaches in an analogous art, a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer and wherein the transmitter also transmits a parameter Θ=(L-1)/n from the remote station (Col. 4, lines 34-59). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer and wherein the transmitter also transmits a parameter Θ=(L-1)/n from the remote station. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Regarding **claim 34**, Aoyama discloses all the particulars of the claim except for a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap

linear equalizer, and wherein the remote station is configured to agree with the base station about a fixed value for the parameter Θ=(L-1)/n. However Frank teaches in an analogous art, a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer, and wherein the remote station is configured to agree with the base station about a fixed value for the parameter Θ=(L-1)/n (Col.4, lines 34-59). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have a training component at the remote station employs a least squares estimation method over n chips of the common reference signal to compute the coefficients of an L -tap linear equalizer and wherein the remote station is configured to agree with the base station about a fixed value for the parameter Θ=(L-1)/n. This modification is useful in estimating channel conditions and thus reducing the signal distortion introduced by the channel.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muthuswamy G. Manoharan whose telephone number is 571-272-5515. The examiner can normally be reached on 7:00AM-2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eng George can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GEORGE ENG
SUPERVISORY PATENT EXAMINER